

Serial No.: 10/541,778
Art Unit: 2621

PU030011
Customer No. 24498

Listing and Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) In a decoder, a method of concealing spatial errors in a coded image comprised of a stream of macroblocks which can be partitioned into sub-macroblocks comprising the steps of:

examining each macroblock for pixel data errors, and if ~~such~~ pixel data errors exist for a sub-macroblock in a macroblock, and then:

~~establishing~~ deriving for the sub-macroblock with pixel data errors, at least one intra-prediction mode from sub-macroblocks neighboring the sub-macroblocks having pixel data errors, and then

deriving estimated pixel data in the sub-macroblock with pixel data errors in accordance with the at least one ~~established~~ derived intra prediction mode to correct the pixel data errors.

2. (Original) The method according to claim 1 wherein the coded image is coded in accordance with a predetermined coding standard and wherein the intra prediction mode is specified by the predetermined coding standard.

3. (Original) The method according to claim 2 wherein the coded image is coded in accordance with the ISO/ITU H.264 coding standard and wherein the intra prediction mode is specified by the ISO/ITU H.264 coding standard.

4. (Currently amended) The method according to claim 1 wherein the ~~establishing~~ deriving of at least one intra-prediction mode is limited to information within a rectangular array of sub-macroblocks centered about the sub-macroblock having pixel data errors.

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5. (Currently amended) The method according to claim 3, wherein the at least one intra prediction mode for the sub-macroblock with pixel data errors is established derived in accordance with a relative position and direction of intra prediction modes of macroblocks neighboring the macroblock with pixel data errors.

6. (Currently amended) In a decoder, a method of concealing spatial errors in a coded image comprised of a stream of macroblocks which can be partitioned into sub-macroblocks, the macroblocks being coded in accordance with the ISO/ITU H.264 Standard, the method comprising the steps of:

examining each macroblock for pixel data errors, and if ~~such pixel data errors exist in a sub-macroblock within for a block in a macroblock, where the block may or may not be the macroblock itself~~, then:

deriving at least one intra-prediction mode ~~for the block with pixel data errors~~ from sub-macroblocks neighboring sub-macroblock with the pixel data errors blocks, the mode specified by the ISO/ITU H.264 standard; and

applying at least one interpolation filter corresponding to the at least one derived intra prediction mode to estimate the pixel data needed in the block with pixel data errors to correct the pixel data errors in the sub-macroblock, wherein the at least one interpolation filter corresponds to the at least one derived intra prediction mode.

7. (Currently amended) The method according to claim 6 wherein the deriving of at least one intra-prediction mode is limited to information within a rectangular array of sub-macroblocks centered about the sub-macroblock having missing pixel data errors.

8. (Currently amended) The method according to claim 7 wherein the deriving of the at least one intra-prediction mode is made in accordance with a relative position of intra prediction modes of sub-macroblocks neighboring the sub-macroblock with missing pixel data errors.

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9. (Currently amended) The method according to claim 6 wherein ~~an~~ individual macroblocks can be intra-predicted as one of a single partition of 16x16 pixels (Intra_16x16 type coding) or as partition of 16 blocks of 4x4 pixels (Intra_4x4 type coding).

10. (Original) The method according to claim 9 wherein for the Intra_16x16 type coding, the intra prediction modes comprise: (a) Mode 0, vertical prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; and (d) Mode 3, plane prediction.

11. (Currently amended) The method according to claim 9 wherein for the Intra_4x4 coding type, the prediction modes each one having associated an interpolation filter to derive a prediction for each pixel within a macroblock.

12. (Original) The method according to claim 9 wherein the prediction modes comprise: (a) Mode 0, vertical prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; (d) Mode 3, diagonal down-left prediction; (e) Mode 4, diagonal down-right prediction; (f) Mode 5, vertical right prediction; (g) Mode 6, horizontal down prediction; (h) Mode 7, vertical left prediction; and (i) Mode 8, horizontal up prediction.

13. (Previously presented) The method according to claim 1, wherein the direction defined by the intra-prediction mode is sent in the coded stream.

14. (Currently amended) The method according to claim 5, wherein the ~~relative~~ position and direction associated with the intra-prediction mode is the ~~relative~~ position in a spatial direction associated with the direction defined by the intra-prediction mode.

15. (Currently amended) The method according to claim 8, wherein the ~~relative~~ position and direction associated with the intra-prediction mode is the ~~relative~~ position in a spatial direction associated with the direction defined by the intra-prediction mode.